## **ABSTRACT**

This thesis document shows the results of research conducted to determine the creation of a user manual, repair, and programming of the KDF-S80 furnaces that helps the student to acquire knowledge of heat treatment tests. The furnaces were manufactured to perform heat treatments in a didactic and educational way, for these furnaces, the state of each of its physical and software components was reviewed, to achieve an integrated repair of this heating equipment. Additionally, the electrical and electronic components such as the temperature programmer and displays were also evaluated, as well as the K type thermocouple which measures the internal temperature of the oven, the cooling fan which oversees lowering and stabilizing the temperature, the electrical resistances which are in charge of heating the internal chamber to obtain the necessary heat to bring the oven to the required temperature. This oven has the following features of AC 200V single phase 50-60Hz 3kW power supply, with a temperature range from 0 to 1150 °C, and a temperature control unit of 0.5 °C scale.

Yo, CERTIFICO que esta traducción es fiel copia del original en español. I CERTIFY that the above is a true and correct translation from the document in Spanish.

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